

Extraction of Total Phenolics from Butterfly Pea Flower Using Ultrasound-Assisted and Maceration Extraction

¹Mohd Zuki, N.N., ¹Nik Hadzir, N.H.

¹*Department of Food Science, Faculty of Food Science and Technology,
Universiti Putra, Malaysia, 43400 UPM, Serdang, Selangor, Malaysia*

²*Department of Food Technology, Faculty of Food Science and Technology, Universiti Putra,
Malaysia, 43400 UPM Serdang, Selangor, Malaysia.*

**Corresponding author: Email: hadzuin@upm.edu.my, Tel: +6018-3124033*

Abstract: Butterfly pea flower, also known as Asian pigeonwings, has been widely used as an ingredient in food as well as medicine due to the high content of various types of antioxidants that are beneficial to health. The most recent technology to extract the bioactive compound from the plant is Ultrasound-Assisted Extraction (UAE) method. This study aimed to investigate the effect of different extraction factors on the phenolic compounds and antioxidant activity present in the butterfly pea flower. This study involved testing different types of solvent which were water, aqueous ethanol and aqueous methanol at three different sonication times which were 10, 20 and 30 min. Maceration was carried out by using the same measurement for 30 min. The extracts were filtered and evaporated by using a rotary evaporator at 50°C. The total phenolic content (TPC) was determined using Folin-Ciocalteu assay while the antioxidant was assessed using 2,2-diphenyl-1-picrylhydrazyl (DPPH) scavenging assay. Based on this study, the optimal condition to increase the extract yield from butterfly pea flower was found to be at a 20-minute sonication, while the highest TPC and antioxidant activity were achieved at a 30-minute sonication using aqueous methanol. In comparison with maceration, UAE demonstrated better results in terms of percentage yield, TPC and antioxidant activity when using aqueous methanol. This approach indicated that using UAE for butterfly pea flower extraction is an efficient technique for furthering its classification as a source of bioactive compounds.

Keywords: Butterfly pea flower, ultrasound-assisted extraction, solvent types, extraction time.